WHAT IS CLAIMED IS:

1. A method for inducing T-cell tolerance or non-responsiveness of donor T-cells to desired alloantigen or xenoantigen bearing cells *in vitro* comprising the following:

(i) providing a culture containing donor tissue containing donor T-cells;

(ii) producing a mixed lymphocyte reaction culture by adding to said donor T-cell culture alloantigen or xenoantigen-bearing cells;

(iii) adding to the resultant mixed lymphocyte culture a gp39 antagonist; and

(iv) maintaining these cells in culture for a sufficient time to render the donor T-cells substantially non-responsiveness to said alloantigen or xenoantigen bearing cells.

2. The method of Claim 1, wherein the tissue containing donor T-cells is donor bone marrow or peripheral blood cells.

3. The method of Claim 1, wherein the gp39 antagonist is selected from the group consisting of an anti-gp39 antibody, soluble CD40 and soluble CD40 fusion protein.

4. The method of Claim 3, wherein the gp39 antagonist is an anti-gp39 antibody.

5. The method of Claim 4, wherein said anti-gp39 antibody is an anti-human gp39 monoclonal antibody.

6. The method of Claim 1, wherein the donor T-cells are cultured with said gp39 antagonist for a time ranging from about 1 to 30 days.

7. The method of Claim 6, wherein said time ranges from 5 to 15 days.

8. The method of Claim 1, wherein the alloantigen or xenoantigen bearing cells comprise cells or tissue obtained from a potential transplant recipient that has been treated to deplete recipient T-cells.

9. The method of Claim 8, wherein T-cell depletion is effected by irradiation.

10. The method of Claim 1, wherein the donor T-cells are transplanted into a recipient in need of such transplantation.

11. The method of Claim 10, wherein the recipient is in need of immune reconstitution as a result of disease or disease treatment.

12. The method of Claim 11, wherein said disease is cancer or autoimmune disease.